tooth, because if it held the flap up, the right leaf could not open unless the flap was divided into two, each being lifted by its own side of the window. In the arched cavity at the window-foot is a longitudinal groove *q*, fig. 13; if, therefore, any portion of rain, in running down the window, should be blown between the slips *n o* and the flap *l*, it would sputter against the top of the cavity and drop from the corner of the groove *q*, thus leaving the fitting of the door against the ridge *k* perfectly dry; and whatever water may get within the flap will run down the sill from under the flap.

No. XVII.

PUMP FOR RACKING WINE.

The large SILVER MEDAL *was presented to Mr. W. H.* HILTON, *7, Regent Street, for his Pump for Racking Wine; a Drawing of which is in the Society's Repository.*

IT is a general complaint among wine-merchants, that the finer and higher-flavoured kinds of light wine are often seriously injured by the loss or alteration of their aroma (called in the trade the *bouquet*), in consequence of exposure to the air during the process of racking, or transferring them from one cask to another. In crowded warehouses, where the casks are placed tier above tier, there is also great difficulty in drawing off the wine from the ground tier without spilling a considerable quantity.

Mr. Hilton's racking-pump, though perhaps capable of improvement, is a great advance on the common method, both with regard to expedition, exposure to air, and loss by spilling. It has been tried at the London Docks, in presence of the custom-house officers and others, and appeared to give entire satisfaction; in consequence of which it was purchased by the directors for use in the wine-vaults of that great establishment.

Plate XIV. fig. 8, represents a section of the pump in action. *l* is the cask from which the wine is passing, and *r* is the cask into which it is received; *m* is a hose with a stop-cock, one end being inserted in the cask *l*, and the other end in the balloon or globular receiver *n;* an air-pipe *o*, open at top, is screwed into the balloon, and *p* is the pump, its pipe descending nearly to the bottom of the balloon; *q* is the hose, with its cock, which communicates between the pump and the receiving-cask *r*.

The pump, with its appendages, being connected with the casks, the cocks of the hose are opened, and the bungs of the casks; the wine then begins to flow from *l* through the hose *m* into the balloon *n;* this it does merely by its own gravity, and at the same time drives out the air from the balloon through the pipe *o*. The pump is now set to work, draws up the wine from the balloon, into which it is prevented from re-entering by a valve opening inwards, forces it by the down-stroke into the hose *q*, and thence into the cask *r*, from which it is prevented from returning into the pump by a valve opening outwards. Even if the pump should draw the wine out of the balloon faster than it flows by gravity out of the cask *l*, there will be no acceleration of the flow of wine out of this cask, and consequently no hazard of disturbing the sediment, for the air will come in by the tube *o* to

supply the vacuum caused by the action of the pump. But if there should be no danger of raising the lees, the flow of wine may be made strictly to correspond with the action of the pump by closing the cock of the tube *o*, in which case the vacuum caused in *n* must be entirely supplied by a proportionably rapid current from the cask *l*.

No. XVIII.

FILTER FOR OIL.

The following Notice respecting a proposed Filter for Oil was communicated by J. ROBISON, Esq. of Edinburgh; to whom the Thanks of the Society were voted for the same.

I BEG leave to mention to you an idea which occurred to me a few days ago, when I happened to witness the difficulties and waste which take place in filtering and clearing oil from its dregs, in which operation, as it appears to be conducted, a great deal of the advantage which is gained by repose and subsidence is again lost in drawing off the oil to pass it through the filter. It appears to me, that by introducing water through a regulated aperture, and from a height sufficient to give the requisite hydrostatic pressure, into the bottom of a butt of oil, and making a communication from the top of the butt to a filter, acting *per ascensum*, all the advantages arising from repose and subsidence would be retained; and by adapting the nature of the filter to the